University of Gdańsk

Subject card

Subject name and code	Diversity of cryptogamic plants, PG_00198086		
Field of study	Natural Resources Conservation		
Date of commencement of studies	October 2026	Academic year of realisation of subject	2026/2027
Education level	Bachelor's studies	Subject group	Obligatory subject group in the field of study Subject group related to scientific research in the field of study
Mode of study	full-time studies	Mode of delivery	at the university
Year of study	1	Language of instruction	Polish
Semester of study	1	ECTS credits	3.0
Learning profile	academic	Assessment form	exam
Conducting unit	Department of Plant Ecology -> Faculty of Biology -> Rector		
Name and surname of lecturer (lecturers)	Subject supervisor	dr hab. Joanna Święta-Musznicka	
	Teachers		

Lesson types

Lesson type	Lecture	Tutorial	Laboratory	Project	Seminar	SUM
Number of study hours	30.0	0.0	0.0	0.0	0.0	30

E-learning hours included: 0.0

Learning activity and number of study hours

Learning activity	Participation in didactic classes included in study plan	Participation in consultation hours	Self-study	SUM
Number of study hours	30	4.0	41.0	75

Subject objectives

Learning the diversity and evolution of cryptogamic plants. Understanding the functions of cryptogamic plants in ecosystems and the human economy. To review selected representatives of the different systematic groups of cryptogamic plants.

Learning outcomes

Course outcome	Subject outcome	Method of verification
[OZPL3_W04] The graduate possesses advanced knowledge and understanding of the characteristics, systematics, and evolution of selected groups of organisms, as well as the basic concepts and mechanisms of evolution	presents the characteristics, systematics and evolution of cryptogamic plants, describes the basic concepts and mechanisms of the evolution of photoautotrophs	[SW4] test/exam - oral or written [SW1] oral statement/ conversation/discussion
[OZPL3_K08] The graduate is ready to systematically update his/her natural knowledge and to apply it in practice	systematically updates his/her knowledge of nature and knows its practical applications	[SK8] observation of student's independent or team work
[OZPL3_U12] The graduate is able to learn independently in a targeted manner	learns independently in a directed manner	[SU1] oral statement/conversation/ discussion [SU4] test/exam - oral or written
[OZPL3_W09] The graduate possesses an advanced comprehension of the current state of knowledge and the latest trends in protection of natural resources, as well as their relationship to other natural disciplines	is familiar with the latest systematic approaches and theories of evolution of cryptogamic plants taking into account the results of molecular studies	[SW4] test/exam - oral or written [SW1] oral statement/ conversation/discussion

Subject contents	Contemporary classification systems of cryptogamic plants. Application of palaeobotanical and molecular methods in reconstructing plant evolution. The origins of life on Earth. The theory of serial endosymbiosis. Phylogenetic relationships and evolutionary trends. Characterisation of the main systematic groups of pro- and eukaryotic aquatic and terrestrial photoautotrophs: morphological and anatomical structure, life cycles, occurrence, ecological requirements, role in the natural environment, bioindication properties. Human use of cryptogamic plants in industry, medicine and forensics.	
Prerequisites and co-requisites		
Assessment methods and criteria		

Subject passing criteria	Passing threshold	Percentage of the final grade
exam	51.0%	100.0%

Recommended reading	Basic literature	Hoek C. van den, Mann D. G., Jahns H. M. 1995. Algae. An introduction to phycology. Cambridge Univ. Press, Cambridge. Lee R. E. 1999. Phycology. Cambridge Univ. Press, Cambridge. Podbielkowski Z., Rejment-Grochowska I., Skirgiełło A. 1979. Rośliny zarodnikowe. PWN, Warszawa. Szweykowska A., Szweykowski J. 2020. Botanika, T. 1 i 2. PWN, Warszawa. Kadłubowska J. 1976. Zarys algologii. PWN, Warszawa.
	Supplementary literature	Brodie J., Lewis J. 2007. Unravelling the algae, the past, present and future of algal systematics. The Systematics Associa tion Special Vol. Ser. 75, CRC Press Taylor & Francis Group, New York. Mehltreter K., Walker L. R., Sharpe J. M. 2010. Fern Ecology. Cambridge Univ. Press, Cambridge. Ruggiero M.A, Cavalier-Smith T. i in. 2015. A higher level classification of all living organisms. PlosOne 10(4): e0119248. Schofield W. B. 1981. Introduction to bryology. Mac Millan, New York.Vanderpoorten A., Goffinet B. 2010. Introduction to Bryophytes. Cambridge University Press. Willis K.J., McElwain J. C. 2002. The evolution of plants. Oxford Univ. Press. Wójciak H. 2007. Porosty, mszaki, paprotniki. Flora Polski. Multico, Warszawa.
	eResources addresses	
Example issues/ example questions/ tasks being completed	history of botanical research; basics of organism classification; organism classification systems; Cavalier-Smith system; endosymbiosis theory; reconstruction of plant evolution; structure, occurrence and use of selected groups of photoautotrophs	
Work placement	Not applicable	

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